

**$\pi_2(1670)$**  $I^G(J^{PC}) = 1^-(2^-+)$ 

NODE=M034

 **$\pi_2(1670)$  MASS**

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	CHG	COMMENT
<b>1672.2 ± 3.0 OUR AVERAGE</b> Error includes scale factor of 1.4. See the ideogram below.					
1658 ± 3 ± 24	420k	ALEKSEEV	10 COMP		190 $\pi^- Pb \rightarrow \pi^- \pi^- \pi^+ Pb'$
1749 ± 10 ± 100	145k	LU	05 B852		18 $\pi^- p \rightarrow \omega \pi^- \pi^0 p$
1676 ± 3 ± 8		1 CHUNG	02 B852		18.3 $\pi^- p \rightarrow \pi^+ \pi^- \pi^- p$
1685 ± 10 ± 30		2 BARBERIS	01		450 $pp \rightarrow p_f 3\pi^0 p_s$
1687 ± 9 ± 15		AMELIN	99 VES		37 $\pi^- A \rightarrow \omega \pi^- \pi^0 A^*$
1669 ± 4		BARBERIS	98B		450 $pp \rightarrow p_f \rho \pi p_s$
1670 ± 4		BARBERIS	98B		450 $pp \rightarrow p_f f_2(1270) \pi p_s$
1730 ± 20		3 AMELIN	95B VES		36 $\pi^- A \rightarrow \pi^+ \pi^- \pi^- A$
1690 ± 14		4 BERDNIKOV	94 VES		37 $\pi^- A \rightarrow K^+ K^- \pi^- A$
1710 ± 20	700	ANTIPOV	87 SIGM	-	50 $\pi^- Cu \rightarrow \mu^+ \mu^- \pi^- Cu$
1676 ± 6		4 EVANGELIS...	81 OMEG	-	12 $\pi^- p \rightarrow 3\pi p$
1657 ± 14		4,5 DAUM	80D SPEC	-	63-94 $\pi p \rightarrow 3\pi X$
1662 ± 10	2000	4 BALTAY	77 HBC	+	15 $\pi^+ p \rightarrow p 3\pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1742 ± 31 ± 49		ANTREASYAN	90 CBAL		$e^+ e^- \rightarrow e^+ e^- \pi^0 \pi^0 \pi^0$
1624 ± 21		1 BELLINI	85 SPEC		40 $\pi^- A \rightarrow \pi^- \pi^+ \pi^- A$
1622 ± 35		6 BELLINI	85 SPEC		40 $\pi^- A \rightarrow \pi^- \pi^+ \pi^- A$
1693 ± 28		7 BELLINI	85 SPEC		40 $\pi^- A \rightarrow \pi^- \pi^+ \pi^- A$
1710 ± 20		8 DAUM	81B SPEC	-	63,94 $\pi^- p$
1660 ± 10		4 ASCOLI	73 HBC	-	5-25 $\pi^- p \rightarrow p \pi_2$

1 From  $f_2(1270)\pi$  decay.

2 From a fit to the invariant mass distribution.

3 From a fit to  $J^{PC} = 2^-+ f_2(1270)\pi, f_0(1370)\pi$  waves.4 From a fit to  $J^P = 2^- S$ -wave  $f_2(1270)\pi$  partial wave.5 Clear phase rotation seen in  $2^- S, 2^- P, 2^- D$  waves. We quote central value and spread of single-resonance fits to three channels.6 From  $\rho\pi$  decay.7 From  $\sigma\pi$  decay.8 From a two-resonance fit to four  $2^- 0^+$  waves. This should not be averaged with all the single resonance fits.

NODE=M034M

NODE=M034M

OCCUR=2

NODE=M034M;LINKAGE=F2

NODE=M034M;LINKAGE=BR

NODE=M034M;LINKAGE=AX

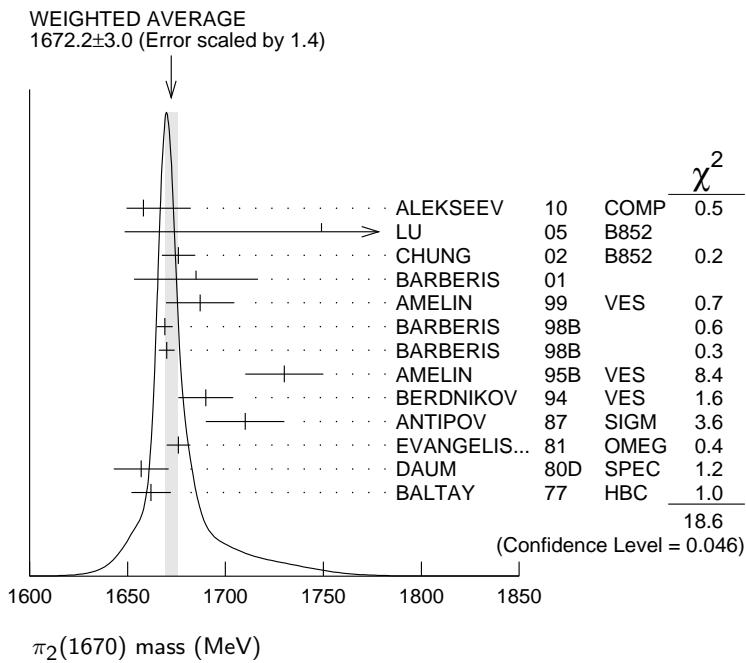
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NODE=M034M;LINKAGE=D

NODE=M034M;LINKAGE=R2

NODE=M034M;LINKAGE=S2

NODE=M034M;LINKAGE=L



$\pi_2(1670)$  mass (MeV)

### $\pi_2(1670)$ WIDTH

NODE=M034W

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	CHG	COMMENT
<b>260± 9 OUR AVERAGE</b>		Error includes scale factor of 1.2.			NODE=M034W
271± 9± 22	420k	ALEKSEEV	10	COMP	190 $\pi^- Pb \rightarrow \pi^- \pi^- \pi^+ Pb'$
408± 60± 250	145k	LU	05	B852	18 $\pi^- p \rightarrow \omega \pi^- \pi^0 p$
254± 3± 31	9 CHUNG		02	B852	18.3 $\pi^- p \rightarrow \pi^+ \pi^- \pi^- p$
265± 30± 40	10 BARBERIS		01		450 $p p \rightarrow p_f 3\pi^0 p_s$
168± 43± 53	AMELIN		99	VES	37 $\pi^- A \rightarrow \omega \pi^- \pi^0 A^*$
268± 15	BARBERIS		98B		450 $p p \rightarrow p_f p \pi p_s$
256± 15	BARBERIS		98B		450 $p p \rightarrow p_f f_2(1270) \pi p_s$
310± 20	11 AMELIN		95B	VES	36 $\pi^- A \rightarrow \pi^+ \pi^- \pi^- A$
190± 50	12 BERDNIKOV		94	VES	37 $\pi^- A \rightarrow K^+ K^- \pi^- A$
170± 80	700	ANTIPOV	87	SIGM	50 $\pi^- Cu \rightarrow \mu^+ \mu^- \pi^- Cu$
260± 20	12 EVANGELIS...		81	OMEG	12 $\pi^- p \rightarrow 3\pi p$
219± 20	12,13 DAUM		80D	SPEC	63-94 $\pi p \rightarrow 3\pi X$
285± 60	2000	12 BALTAY	77	HBC	+ 15 $\pi^+ p \rightarrow p 3\pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
236± 49± 36	ANTREASYAN	90	CBAL		$e^+ e^- \rightarrow e^+ e^- \pi^0 \pi^0 \pi^0$
304± 22	9 BELLINI		85	SPEC	40 $\pi^- A \rightarrow \pi^- \pi^+ \pi^- A$
404± 108	14 BELLINI		85	SPEC	40 $\pi^- A \rightarrow \pi^- \pi^+ \pi^- A$
330± 90	15 BELLINI		85	SPEC	40 $\pi^- A \rightarrow \pi^- \pi^+ \pi^- A$
312± 50	16 DAUM		81B	SPEC	- 63,94 $\pi^- p$
270± 60	12 ASCOLI		73	HBC	- 5-25 $\pi^- p \rightarrow p \pi_2$

9 From  $f_2(1270)\pi$  decay.

10 From a fit to the invariant mass distribution.

11 From a fit to  $J^{PC} = 2^- + f_2(1270)\pi$ ,  $f_0(1370)\pi$  waves.

12 From a fit to  $J^P = 2^- - f_2(1270)\pi$  partial wave.

13 Clear phase rotation seen in  $2^- S$ ,  $2^- P$ ,  $2^- D$  waves. We quote central value and spread of single-resonance fits to three channels.

14 From  $\rho\pi$  decay.

15 From  $\sigma\pi$  decay.

16 From a two-resonance fit to four  $2^- 0^+$  waves. This should not be averaged with all the single resonance fits.

NODE=M034W;LINKAGE=F2

NODE=M034W;LINKAGE=BR

NODE=M034W;LINKAGE=AX

NODE=M034W;LINKAGE=P

NODE=M034W;LINKAGE=D

NODE=M034W;LINKAGE=R2

NODE=M034W;LINKAGE=S2

NODE=M034W;LINKAGE=L

**$\pi_2(1670)$  DECAY MODES**

NODE=M034215;NODE=M034

Mode	Fraction ( $\Gamma_i/\Gamma$ )	Confidence level
$\Gamma_1$ $3\pi$	(95.8±1.4) %	
$\Gamma_2$ $\pi^+\pi^-\pi^0$		DESIG=20
$\Gamma_3$ $\pi^0\pi^0\pi^0$		DESIG=22
$\Gamma_4$ $f_2(1270)\pi$	(56.3±3.2) %	DESIG=23
$\Gamma_5$ $\rho\pi$	(31 ± 4) %	DESIG=8
$\Gamma_6$ $\sigma\pi$	(10.9±3.4) %	DESIG=2
$\Gamma_7$ $(\pi\pi)_S\text{-wave}$	( 8.7±3.4) %	DESIG=13
$\Gamma_8$ $K\bar{K}^*(892)+\text{c.c.}$	( 4.2±1.4) %	DESIG=11
$\Gamma_9$ $\omega\rho$	( 2.7±1.1) %	DESIG=5
$\Gamma_{10}$ $\gamma\gamma$	< 2.8 × 10 <sup>-7</sup>	DESIG=14
$\Gamma_{11}$ $\eta\pi$		DESIG=12
$\Gamma_{12}$ $\pi^\pm 2\pi^+ 2\pi^-$		DESIG=3
$\Gamma_{13}$ $\rho(1450)\pi$	< 3.6 × 10 <sup>-3</sup>	DESIG=4
$\Gamma_{14}$ $b_1(1235)\pi$	< 1.9 × 10 <sup>-3</sup>	DESIG=15
$\Gamma_{15}$ $\eta 3\pi$		DESIG=16
$\Gamma_{16}$ $f_1(1285)\pi$	possibly seen	DESIG=24
$\Gamma_{17}$ $a_2(1320)\pi$	not seen	DESIG=25

**CONSTRAINED FIT INFORMATION**

An overall fit to 4 branching ratios uses 6 measurements and one constraint to determine 4 parameters. The overall fit has a  $\chi^2 = 1.9$  for 3 degrees of freedom.

The following *off-diagonal* array elements are the correlation coefficients  $\langle \delta x_i \delta x_j \rangle / (\delta x_i \cdot \delta x_j)$ , in percent, from the fit to the branching fractions,  $x_i \equiv \Gamma_i / \Gamma_{\text{total}}$ . The fit constrains the  $x_i$  whose labels appear in this array to sum to one.

$$\begin{array}{c|ccc} & x_5 & & \\ \hline x_5 & -53 & & \\ x_7 & -29 & -59 & \\ x_8 & -8 & -21 & -9 \\ \hline & x_4 & x_5 & x_7 \end{array}$$

 **$\pi_2(1670)$  PARTIAL WIDTHS**

$\Gamma(\gamma\gamma)$					$\Gamma_{10}$
VALUE (keV)	CL%	DOCUMENT ID	TECN	CHG	COMMENT
<0.072	90	17 ACCIARRI	97T L3		$e^+ e^- \rightarrow e^+ e^- \pi^+ \pi^- \pi^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.19	90	17 ALBRECHT	97B ARG		$e^+ e^- \rightarrow e^+ e^- \pi^+ \pi^- \pi^0$
1.41 ± 0.23 ± 0.28		ANTREASYAN	90 CBAL 0		$e^+ e^- \rightarrow e^+ e^- \pi^0 \pi^0 \pi^0$
0.8 ± 0.3 ± 0.12		18 BEHREND	90C CELL 0		$e^+ e^- \rightarrow e^+ e^- \pi^+ \pi^- \pi^0$
1.3 ± 0.3 ± 0.2		19 BEHREND	90C CELL 0		$e^+ e^- \rightarrow e^+ e^- \pi^+ \pi^- \pi^0$

17 Decaying into  $f_2(1270)\pi$  and  $\rho\pi$ .18 Constructive interference between  $f_2(1270)\pi, \rho\pi$  and background.

19 Incoherent Ansatz.

NODE=M034217

NODE=M034W1  
NODE=M034W1

OCCUR=2

NODE=M034W1;LINKAGE=QQ  
NODE=M034W1;LINKAGE=CC  
NODE=M034W1;LINKAGE=GG

NODE=M034230

NODE=M034G01  
NODE=M034G01

NODE=M034G01;LINKAGE=SC

 **$\pi_2(1670) \Gamma(i)\Gamma(\gamma\gamma)/\Gamma(\text{total})$** 

$\Gamma(\pi^+\pi^-\pi^0) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$				$\Gamma_2\Gamma_{10}/\Gamma$
VALUE (keV)	CL%	DOCUMENT ID	TECN	COMMENT
<0.1	95	20 SCHEGELSKY	06 RVUE	$\gamma\gamma \rightarrow \pi^+\pi^-\pi^0$

20 From analysis of L3 data at 183–209 GeV.

**$\pi_2(1670)$  BRANCHING RATIOS** **$\Gamma(3\pi)/\Gamma_{\text{total}}$** VALUE **$0.958 \pm 0.014$  OUR FIT**DOCUMENT ID **$\Gamma_1/\Gamma = (\Gamma_4 + \Gamma_5 + \Gamma_7)/\Gamma$** 

NODE=M034220

 **$\Gamma(\pi^0\pi^0\pi^0)/\Gamma(\pi^+\pi^-\pi^0)$** VALUE **$0.29 \pm 0.03 \pm 0.05$** DOCUMENT IDCOMMENT **$\Gamma_3/\Gamma_2$** 

NODE=M034R21

NODE=M034R20

 **$\Gamma(\rho\pi)/0.565\Gamma(f_2(1270)\pi)$** (With  $f_2(1270) \rightarrow \pi^+\pi^-$ .)VALUE **$0.97 \pm 0.09$  OUR AVERAGE**DOCUMENT IDTECNCOMMENT **$\Gamma_5/0.565\Gamma_4$** 

NODE=M034R21

NODE=M034R21

NODE=M034R16

NODE=M034R16

NODE=M034R16

 **$\Gamma(\sigma\pi)/\Gamma(f_2(1270)\pi)$** VALUE **$0.19 \pm 0.06$  OUR AVERAGE**DOCUMENT IDTECNCOMMENT **$\Gamma_6/\Gamma_4$** 

NODE=M034R15

NODE=M034R15

 $0.17 \pm 0.02 \pm 0.07$ DOCUMENT IDTECNCOMMENT

CHUNG 02 B852

 $18.3 \pi^- p \rightarrow \pi^+ \pi^- \pi^- p$  $0.24 \pm 0.10$ DOCUMENT IDTECNCOMMENT

BAKER 99 SPEC

 $1.94 \bar{p} p \rightarrow 4\pi^0$  **$\frac{1}{2}\Gamma(\rho\pi)/\Gamma(\pi^\pm\pi^+\pi^-)$**  **$\frac{1}{2}\Gamma_5/(0.565\Gamma_4 + \frac{1}{2}\Gamma_5 + 0.624\Gamma_7)$** VALUE **$0.29 \pm 0.04$  OUR FIT**DOCUMENT IDTECNCOMMENT **$0.29 \pm 0.05$** DOCUMENT IDTECNCOMMENT

• • • We do not use the following data for averages, fits, limits, etc. • • •

 $<0.3$ DOCUMENT IDTECNCOMMENT

BARTSCH 68 HBC

 $+ 8 \pi^+ p \rightarrow 3\pi p$  **$0.565\Gamma(f_2(1270)\pi)/\Gamma(\pi^\pm\pi^+\pi^-)$**  **$0.565\Gamma_4/(0.565\Gamma_4 + \frac{1}{2}\Gamma_5 + 0.624\Gamma_7)$** (With  $f_2(1270) \rightarrow \pi^+\pi^-$ .)VALUE **$0.604 \pm 0.035$  OUR FIT**DOCUMENT IDTECNCOMMENT **$0.60 \pm 0.05$  OUR AVERAGE**

Error includes scale factor of 1.3.

 $0.61 \pm 0.04$ DOCUMENT IDTECNCOMMENT

24 DAUM 81B SPEC

 $63,94 \pi^- p$  $0.76 \pm 0.24$ DOCUMENT IDTECNCOMMENT

ARMENISE 69 DBC

 $+ 5.1 \pi^+ d \rightarrow d 3\pi$  $0.35 \pm 0.20$ DOCUMENT IDTECNCOMMENT

BALTAY 68 HBC

 $+ 7-8.5 \pi^+ p$ 

• • • We do not use the following data for averages, fits, limits, etc. • • •

 $0.59$ DOCUMENT IDTECNCOMMENT

BARTSCH 68 HBC

 $+ 8 \pi^+ p \rightarrow 3\pi p$  **$0.624\Gamma((\pi\pi)_S\text{-wave})/\Gamma(\pi^\pm\pi^+\pi^-)$**  **$0.624\Gamma_7/(0.565\Gamma_4 + \frac{1}{2}\Gamma_5 + 0.624\Gamma_7)$** (With  $(\pi\pi)_S\text{-wave} \rightarrow \pi^+\pi^-$ .)VALUE **$0.10 \pm 0.04$  OUR FIT**DOCUMENT IDTECNCOMMENT **$0.10 \pm 0.05$** DOCUMENT IDTECNCOMMENT

24 DAUM 81B SPEC

 $63,94 \pi^- p$  **$\Gamma(K\bar{K}^*(892)+\text{c.c.})/\Gamma(f_2(1270)\pi)$**  **$\Gamma_8/\Gamma_4$** 

NODE=M034R13

NODE=M034R13

 **$0.075 \pm 0.025$  OUR FIT**DOCUMENT IDTECNCOMMENT **$0.075 \pm 0.025$** DOCUMENT IDTECNCOMMENT

25 ARMSTRONG 82B OMEG

 $- 16 \pi^- p \rightarrow K^+ K^- \pi^- p$  **$\Gamma(\omega\rho)/\Gamma_{\text{total}}$** VALUE **$0.027 \pm 0.004 \pm 0.010$** DOCUMENT IDTECNCOMMENT

26 AMELIN 99 VES

 $37 \pi^- A \xrightarrow{\omega \pi^- \pi^0 A^*}$  **$\Gamma(\eta\pi)/\Gamma(\pi^\pm\pi^+\pi^-)$**  **$\Gamma_{11}/(0.565\Gamma_4 + \frac{1}{2}\Gamma_5 + 0.624\Gamma_7)$** (All  $\eta$  decays.)VALUE **$<0.09$** DOCUMENT IDTECNCOMMENT

BALTAY 68 HBC

 $+ 7-8.5 \pi^+ p$ 

• • • We do not use the following data for averages, fits, limits, etc. • • •

 $<0.10$ DOCUMENT IDTECNCOMMENT

CRENNELL 70 HBC

 $- 6 \pi^- p \rightarrow f_2 \pi^- N$  **$\Gamma_9/\Gamma$** 

NODE=M034R17

NODE=M034R17

NODE=M034R5

NODE=M034R5

NODE=M034R5

$\Gamma(\pi^\pm 2\pi^+ 2\pi^-)/\Gamma(\pi^\pm \pi^+ \pi^-)$ VALUE $<0.10$ DOCUMENT ID

CRENNELL

 $\Gamma_{12}/(0.565\Gamma_4 + \frac{1}{2}\Gamma_5 + 0.624\Gamma_7)$ TECN

HBC

CHG

-

6

 $\pi^- p \rightarrow$  $f_2 \pi^- N$  $<0.1$ 

BALAY

68

HBC

+

7,8.5

 $\pi^+ p$  $\Gamma(\rho(1450)\pi)/\Gamma_{\text{total}}$ VALUE $<0.0036$ CL%

97.7

DOCUMENT ID

AMELIN

TECN

VES

 $\Gamma_{13}/\Gamma$ COMMENT $37 \pi^- A \xrightarrow{\omega \pi^- \pi^0} A^*$  $\Gamma(b_1(1235)\pi)/\Gamma_{\text{total}}$ VALUE $<0.0019$ CL%

97.7

DOCUMENT ID

AMELIN

TECN

VES

 $\Gamma_{14}/\Gamma$ COMMENT $37 \pi^- A \xrightarrow{\omega \pi^- \pi^0} A^*$  $\Gamma(f_1(1285)\pi)/\Gamma_{\text{total}}$ VALUEpossibly seenEVTS

69k

DOCUMENT ID

KUHN

TECN

B852

 $\Gamma_{16}/\Gamma$ COMMENT $18 \pi^- p \rightarrow$  $\eta \pi^+ \pi^- \pi^- p$  $\Gamma(a_2(1320)\pi)/\Gamma_{\text{total}}$ VALUEnot seenEVTS

69k

DOCUMENT ID

KUHN

TECN

B852

 $\Gamma_{17}/\Gamma$ COMMENT $18 \pi^- p \rightarrow$  $\eta \pi^+ \pi^- \pi^- p$ **D-wave/S-wave RATIO FOR  $\pi_2(1670) \rightarrow f_2(1270)\pi$** VALUE $-0.18 \pm 0.06$ DOCUMENT ID

22 BAKER

TECN

SPEC

COMMENT $1.94 \bar{p} p \rightarrow 4\pi^0$  $\bullet \bullet \bullet$  We do not use the following data for averages, fits, limits, etc.  $\bullet \bullet \bullet$ 0.22  $\pm$  0.1024 DAUM 81B SPEC 63,94  $\pi^- p$ **F-wave/P-wave RATIO FOR  $\pi_2(1670) \rightarrow \rho\pi$** VALUE $-0.72 \pm 0.07 \pm 0.14$ DOCUMENT ID

CHUNG

TECN

B852

COMMENT $18.3 \pi^- p \rightarrow \pi^+ \pi^- \pi^- p$ 

21 Using BARBERIS 98B.

22 Using preliminary CBAR data.

23 With the  $\sigma\pi$  in  $L=2$  and the  $f_2(1270)\pi$  in  $L=0$ .24 From a two-resonance fit to four  $2^- 0^+$  waves.25 From a partial-wave analysis of  $K^+ K^- \pi^-$  system.26 Normalized to the  $B(\pi_2(1670) \rightarrow f_2\pi)$ .

NODE=M034R6

NODE=M034R6;CHECK LIMITS

NODE=M034R18

NODE=M034R18

NODE=M034R19

NODE=M034R19

NODE=M034R23

NODE=M034R23

NODE=M034R24

NODE=M034R24

NODE=M034R14

NODE=M034R14

NODE=M034R22

NODE=M034R22

NODE=M034R;LINKAGE=RB

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REFID=20847

REFID=21553

REFID=20805

REFID=20689

REFID=21531

REFID=21532

 **$\pi_2(1670)$  REFERENCES**

ALEKSEEV	10	PRL 104 241803	M.G. Alekseev <i>et al.</i>	(COMPASS Collab.)
SCHEGELSKY	06	EPJ A27 199	V.A. Schegelsky <i>et al.</i>	
LU	05	PRL 94 032002	M. Lu <i>et al.</i>	(BNL E852 Collab.)
KUHN	04	PL B595 109	J. Kuhn <i>et al.</i>	(BNL E852 Collab.)
CHUNG	02	PR D65 072001	S.U. Chung <i>et al.</i>	(BNL E852 Collab.)
BARBERIS	01	PL B507 14	D. Barberis <i>et al.</i>	
AMELIN	99	PAN 62 445	D.V. Amelin <i>et al.</i>	(VES Collab.)
		Translated from YAF 62 487.		
BAKER	99	PL B449 114	C.A. Baker <i>et al.</i>	
BARBERIS	98B	PL B422 399	D. Barberis <i>et al.</i>	(WA 102 Collab.)
ACCIRRI	97T	PL B413 147	M. Acciarri <i>et al.</i>	(L3 Collab.)
ALBRECHT	97B	ZPHY C74 469	H. Albrecht <i>et al.</i>	(ARGUS Collab.)
AMELIN	95B	PL B356 595	D.V. Amelin <i>et al.</i>	(SERP, TBIL)
BERDNIKOV	94	PL B337 219	E.B. Berdnikov <i>et al.</i>	(SERP, TBIL)
ANTREASYAN	90	ZPHY C48 561	D. Antreasyan <i>et al.</i>	(Crystal Ball Collab.)
BEHREND	90C	ZPHY C46 583	H.J. Behrend <i>et al.</i>	(CELLO Collab.)
ANTIPOV	87	EPL 4 403	Y.M. Antipov <i>et al.</i>	(SERP, JINR, INRM+)
BELLINI	85	SJNP 41 781	D. Bellini <i>et al.</i>	
		Translated from YAF 41 1223.		
ARMSTRONG	82B	NP B202 1	T.A. Armstrong, B. Baccari	(AACH3, BARI, BONN+)
DAUM	81B	NP B182 269	C. Daum <i>et al.</i>	(AMST, CERN, CRAC, MPIM+)
EVANGELIS...	81	NP B178 197	C. Evangelista <i>et al.</i>	(BARI, BONN, CERN+)
Also		NP B186 594	C. Evangelista	
DAUM	80D	PL 89B 285	C. Daum <i>et al.</i>	(AMST, CERN, CRAC, MPIM+) JP
BALAY	77	PRL 39 591	C. Baltay, C.V. Cautis, M. Kalelkar	(COLU) JP
ASCOLI	73	PR D7 669	G. Ascoli	(ILL, TNTO, GENO, HAMB, MILA+) JP
CRENNELL	70	PRL 24 781	D.J. Crennell <i>et al.</i>	(BNL)
ARMENISE	69	LNC 2 501	N. Armenise <i>et al.</i>	(BARI, BGNA, FIRZ)
BALAY	68	PRL 20 887	C. Baltay <i>et al.</i>	(COLU, ROCH, RUTG, YALE)
BARTSCH	68	NP B7 345	J. Bartsch <i>et al.</i>	(AACH, BERL, CERN) JP